

## IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): An apparatus for generating pseudorandom sequences ~~characterized by~~ comprising:

cellular automata of a first type for generating a first sequence with higher randomness;

cellular automata of a second type for generating a second sequence with predetermined lower bound on the period; and

adders for performing bit-to-bit mod2 sum of the first sequences and the second sequences.

Claim 2 (Currently Amended): The apparatus according to claim 1, ~~characterized in that~~ wherein:

the cellular automata of a first type is two-dimensional cellular automata;

the cellular automata of a second type is 2-by-L cellular automata; and

the summation results from the adders are outputted as the pseudorandom sequences.

Claim 3 (Currently Amended): The apparatus according to claim 1, ~~characterized by~~ further comprising:

cellular automata of a third type for generating a third sequence, the cellular automata of a third type having cells whose states can be computed based on corresponding cell control word and/or rule control word; wherein

the cell control word is generated by the cellular automata of a second type;

the rule control word is generated by the cellular automata of a first type; and

the adders for performing bit-to-bit mod2 sum of the first, the second and the third sequences.

Claim 4 (Currently Amended): The apparatus according to claim 3, ~~characterized in that~~ wherein:

the summation results from the adders are outputted as the pseudorandom sequences.

Claim 5 (Currently Amended): The apparatus according to claim 2 ~~or claim 4, characterized by~~ further comprising:

a block for performing nonlinear mapping on the summation results from the adders;  
and

a block for perform non-uniform decimation on the results of the nonlinear mapping;  
wherein the decimated result is outputted as the pseudorandom sequence.

Claim 6 (Currently Amended): The apparatus according to claim 5, ~~characterized in that~~ wherein:

each of the blocks includes at least one nonlinear function.

Claim 7 (Currently Amended): The apparatus according to claim 5, ~~characterized in that~~ wherein:

the block for performing nonlinear mapping includes at least one look-up table for nonlinear mapping based on the Latin squares.

Claim 8 (Currently Amended): An apparatus for performing cryptographic processing characterized by comprising:

a cryptographic processor for encrypting data using pseudorandom sequences; and  
a pseudorandom sequence generator for generating the pseudorandom sequences;  
wherein the pseudorandom number generator is configured to include the apparatus  
according to ~~any one of claims 1-7~~ claim 1.

Claim 9 (Currently Amended): A method for generating pseudorandom sequences  
using cellular automata ~~characterized by comprising the steps of:~~

generating a first sequence with higher randomness;  
generating a second sequence with predetermined lower bound on the period; and  
performing bit-to-bit mod2 sum of the first sequences and the second sequences.

Claim 10 (Currently Amended): A computer program for causing a computer to  
execute a method for generating pseudorandom sequences using cellular automata, the  
computer program wherein ~~characterized in that:~~

the method includes ~~the steps of~~  
generating a first sequence with higher randomness; generating a second sequence  
with predetermined lower bound on the period; and  
performing bit-to-bit mod2 sum of the first sequences and the second sequences.

Claim 11 (Currently Amended): A recording medium storing a computer program for  
causing a computer to execute a method for generating pseudorandom sequences using  
cellular automata, the recording medium ~~characterized in that~~ wherein:

the method includes ~~the steps of~~

generating a first sequence with higher randomness; generating a second sequence with predetermined lower bound on the period; and  
performing bit-to-bit mod2 sum of the first sequences and the second sequences.